FRICTION ROLL DRIVE BEARING BOXES

PROCEDURE FOR RESTORING OIL CLOSURE LIP CLEARANCE

1. GENERAL

1.01 This section covers procedures for restoring the clearance between the friction roll shaft and the outer oil closure lip of bearing boxes of friction roll drives to prevent oil leakage when worn bearings allow the shaft to contact the oil closure lip.

2. TOOLS AND MATERIALS

Code or Spec.No.	Description
Tools	
245	3/8" and 7/16" Hex. Open Double End Flat Wrench
295	5/16" Bristo Set Screw Wrench
344	Offset Screwdriver
590A	Oil Closure Cutter
KS-6367	7/16" and 5/8" Hex. Open Double End Flat Wrench
KS-8097	5/16" and 5/8" Offset Box Wrench
R-6440	3/8" Square Wrench
R-8950	Syringe
-	4 oz. Riveting Hammer
-	1 Pint Oiler
-	P-Long Nose Pliers
-	5/32" Pin Punch
-	3" Cabinet Screwdriver
-	4" Regular Screwdriver
P-481039	Pin (Clevis Pin)
P-481040	Cutter (Cutter Blade)
Materials	
KS-2245	Oil
KS-2423 or D-98063	Cloth
KS-7860	Petroleum Spirit
-	Wire (for supporting drive shaft)
-	Receptacles for Drained Oil

3. PROCEDURE FOR RESTORING OIL CLOSURE CLEARANCE

Preparation of Drive

3.01 Before stopping a drive, make the associated circuits busy. Circuits which are so affected shall be made busy in the approved manner.

3.02 Remove the roll guard mounting screws with the 4" regular screwdriver or loosen the screws with the No. 344 offset screwdriver and remove them with the 3" cabinet screwdriver and remove the shaft guard. If the guard is stuck to the bearing case, it may be loosened by tapping the guard lightly.

3.03 Remove the shaft coupling as follows. Loosen the Bristo set screws in the coupling head with the No. 295 Bristo set screw wrench or when the coupling head is pinned to the shaft, drive out the tapered pin using the 4 oz. riveting hammer and 5/32" pin punch. Place a piece of wire around the horizontal shaft and fasten the wire to the frame in order to support the shaft and prevent strain on the other coupling and then slide the coupling head back on the shaft. Raise the shaft to allow room for the No. 590A oil closure cutter to be attached to the end of the friction roll shaft. If more convenient, the horizontal shaft may be removed.

Preparation of No. 590A Oil Closure Cutter

3.04 Place the friction (knurled) nut on the threaded shaft of the tool so that the nut engages approximately three-quarters of its thickness.

3.05 While holding the cutter blade with the smooth end against the counterbored end of the sleeve and the gap of the blade opposite the sleeve key, apply enough pressure with the fingers to the blade to reduce its diameter sufficiently to permit insertion in the sleeve. Avoid exerting excessive pressure which may break the blade. Insert the blade in the sleeve until it rests on the bottom of the counterbore. Now slide the sleeve over the threaded shaft so that the smooth end of the sleeve is toward the friction nut and the key in the sleeve engages the keyway in the threaded portion.

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3.06 Place the clevis of the threaded shaft over the end of the friction roll shaft and then place a clevis pin through the hole as shown in Fig. 1. The pin shall be positioned so that it will be slightly underflush in the holes of the clevis. With the tool in this position slide the sleeve and cutter blade over the clevis pin and turn up the nut until the cutter blade touches the oil closure lip as shown in Fig. 2.

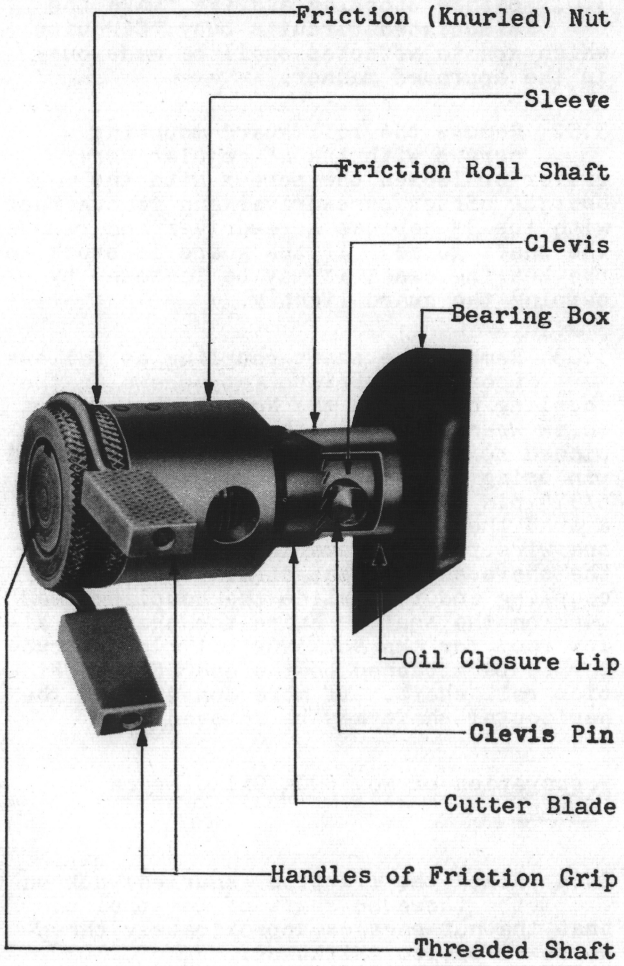

Fig. 1 - No. 590A Oil Closure Cutter

Cutting Clearance in Oil Closure Lip

3.07 Start the motor in the approved manner. Exert enough pressure to the handles of the friction grip to cause the friction nut to advance on the threaded shaft which in turn will advance the cutter slowly into the metal of the oil closure.

Caution: Do not apply excessive pressure on the friction grip as the cutter may jam in the oil closure and break.

Continue this operation until the sleeve of the tool is nearly against the oil closure as shown in Fig. 3, at which time the cut will have been completed. Stop the motor.

Note: In general, one cutter blade will satisfactorily cut 6 to 8 oil closures. Replace the blade when it fails to cut properly.

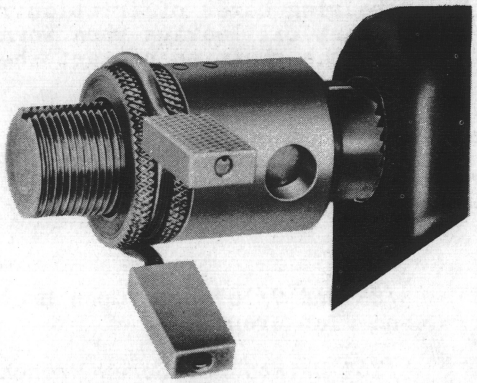

Fig. 2 - Position of No. 590A Oil Closure Cutter Before Start of Cut

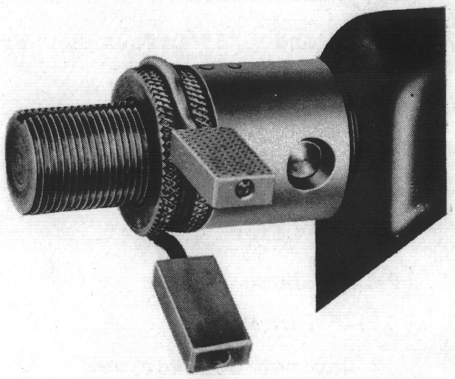

Fig. 3 - Position of No. 590A Oil Closure Cutter After Completion of Cut

3.08 With the cut completed, the clevis pin will be in approximate alignment with the holes in the sleeve, as shown in Fig. 3, and the pin can be readily pushed out with the 3" cabinet screwdriver thereby disconnecting the tool from the friction roll shaft. If the position of the clevis pin is such that it is not accessible, rotate the motor coupling by hand until pin is accessible. In some cases it may be necessary to change the position of the friction nut.

Caution: Do not start and stop the motor to reposition the pin.

Remove the sleeve and threaded shaft taking care that the cutter blade is removed with the sleeve. If the cutter blade should remain in the oil closure, remove it with the P-long nose pliers.

Flushing, Draining and Refilling Bearing Box

3.09 Force KS-7860 petroleum spirits into the newly formed clearance between the oil closure lip and the friction roll shaft using the R-8950 syringe. This is to remove any metal cuttings that may be adhering to the oil closure lips or shaft.

3.10 Where drives are not equipped with external oil pipes and the bearing box is equipped with filling and drain plugs, remove the plugs using either the No. 245, KS-6367, KS-8097 or R-6440 wrench and allow the oil and petroleum spirits to drain into a suitable container. Where the drive is equipped with external oil pipes, do not attempt to drain the oil or petroleum spirits. Where the oil has been drained from the bearing box insert and seal the drain plug as outlined in Section 159-720-801 covering friction roll drives and fill the bearing box with KS-2245 oil to the oil level specified in Section 159-720-701 covering friction roll drives. Insert the filling plug.

3.11 Reassembling Apparatus: Reassemble all parts in reverse order as outlined in Section 159-725-701 covering gear reduction drives, horizontal connecting shafts and associated bearings.